

# Proposed Regulatory Language

## Division 3. AIR RESOURCES

### Chapter 1. AIR RESOURCES BOARD

#### Subchapter 10. Climate Change

#### Article 4. Regulations to Achieve Greenhouse Gas Emission Reductions

#### Subarticle 4. Gas Insulated Switchgear and Particle Accelerators

## PROPOSED REGULATION ORDER

Adopt new Subarticle 4, Gas Insulated Switchgear and Particle Accelerators

Sections 95350 to 95359, title 17, California Code of Regulations, to read as follows:

### Subchapter 10. Climate Change

#### Article 4. Regulations to Achieve Greenhouse Gas Emission Reductions

[Note: All of the text below is new language to be added to the California Code of Regulations (CCR)]

#### Subarticle 4. Gas Insulated Switchgear and from Particle Accelerators

##### Sections 95350 through 95359

#### **§ 95350. Purpose, Scope and Applicability.**

- (a) Purpose. The purpose of this regulation is to lower greenhouse gas emission levels by reducing sulfur hexafluoride (SF<sub>6</sub>) emissions from gas insulated switchgear and particle accelerators.
- (b) Scope. This Subarticle addresses:
  - (1) SF<sub>6</sub> used in:
    - (A) gas insulated switchgear; and
    - (B) particle accelerators.
  - (2) Emission detection and leak repair in gas insulated switchgear.
  - (3) The replacement of gas-insulated, low-voltage electrical circuit breakers with non-SF<sub>6</sub>-containing circuit breakers.
- (c) Applicability and exemptions.
  - (1) The provisions of this Subarticle apply to:
    - (A) The owners of gas insulated switchgear; and
    - (B) operators of particle accelerators.
  - (2) Operators of particle accelerators which use SF<sub>6</sub> for medical and national security purposes are exempt from this regulation.

#### **§ 95351. Definitions.**

For the purposes of this Subarticle the following definitions apply:

- (a) **“Automatic emission detection system”** means a calibrated, electronic system used to detect leaks of SF<sub>6</sub> from gas insulated switchgear which, upon detection, alerts the operator.
- (b) **“Executive Officer”** means the Executive Officer of the California Air Resources Board or his or her designee.
- (c) **“Gas container”** means a pressurized vessel containing or designed to contain SF<sub>6</sub>.
- (d) **“Gas servicing cart”** means a mobile apparatus used to evacuate and process SF<sub>6</sub> from gas insulated switchgear.
- (e) **“Gas-insulated switchgear or GIS”** means the combination of electrical disconnects, fuses, transformers and/or circuit breakers used to isolate electrical equipment, which are insulated by pressurized SF<sub>6</sub> gas.
- (f) **“GIS Owner”** means the person that owns gas insulated switchgear.
- (g) **“Emission rate”** means a facility’s total annual SF<sub>6</sub> emission divided by the total nameplate capacity of all active equipment using SF<sub>6</sub>.
- (h) **“Particle Accelerator”** means a device which uses electric fields to propel electrically charged particles to high speeds and to contain them in well-defined beams for the purpose of either inducing high energy reactions or producing high energy radiation.
- (i) **“Particle Accelerator Operator”** means the person responsible for the operations of particle accelerators.

- (k) **“Person”**<sup>1</sup> shall have the same meaning as defined in Health and Safety Code section 39047.
- (l) **“Retire”** means the permanent removal from service of gas insulated switchgear.
- (m) **“Use”** means the utilization of SF<sub>6</sub> in the filling, refilling, or maintenance of equipment covered by this regulation.

**§ 95352. Leak Detection and Repair.**

- (a) Leak Detection.
  - (1) An automatic leak detection system shall be:
    - (A) Installed on all gas insulated switchgear;
    - (B) Maintained to ensure it is able to automatically detect and provide immediate operator notification of SF<sub>6</sub> leakage.
- (b) Leak Repair.
  - (1) GIS owners and particle accelerator operators must ensure the repair of leaks occurring from GIS, gas containers and gas servicing carts containing SF<sub>6</sub>.
  - (2) An SF<sub>6</sub> leak(s) must be repaired within 24 hours of leak detection, as evidenced by any of the following:
    - (A) The need to add SF<sub>6</sub>;
    - (B) A leak inspection;
    - (C) An automatic leak detection system alarm;
    - (D) Any indication of a SF<sub>6</sub> discharge into the atmosphere at any time.

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<sup>1</sup> 39047. "Person" includes all of the following:

- (a) A "person" as defined in Section 19.
- (b) Any state or local governmental agency or public district, or any officer or employee thereof. However, no state or local governmental agency or public district, or any officer or employee thereof, shall be criminally liable or responsible under the provisions of Part 4 (commencing with Section 41500) for any acts done by such governmental agency, or public district, in the performance of its functions or by such officers or employees in the performance of their duties.
- (c) The United States or its agencies, to the extent authorized by federal law.

- c) A leak detection and repair log shall be maintained to document equipment down-times, servicing and maintenance. This log shall include, but is not limited to, the following information:
- (1) Equipment location;
  - (2) Equipment identification number(s);
  - (3) Date of leak detection;
  - (4) Amount of SF<sub>6</sub> emitted;
  - (5) Type, size and age of equipment where the leak(s) has occurred;
  - (6) The location and cause of the leak (e.g., at the porcelain bushing end cap and/or between the bushing and the base mounting flange on circuit breakers);
  - (7) The method(s) used to locate the leak (e.g, SF<sub>6</sub> gas sniffing sensors, laser-based remote sensing technology);
  - (8) The method(s) used to repair the leak(s);
  - (9) The date the leak repair(s) occurred; or
  - (10) The date the equipment was replaced, if applicable.

**§ 95353. Gas-Insulated Circuit Breaker Replacement.**

- (a) GIS owners and particle accelerator operators shall replace all retiring low- voltage ( $\leq 70$  kilovolt) gas-insulated circuit breakers with vacuum circuit breakers.
- (b) Effective December 31, 2019, no low-voltage circuit breaker shall contain SF<sub>6</sub>.

#### **§ 95354. Maximum Annual Emission Rate.**

The maximum annual emission rate for GIS owners and particle accelerator operators shall not exceed the following:

<b>Effective Date</b>	<b>Maximum Emission Rate</b>
January 1, 2011	10.0%
January 1, 2012	9.0%
January 1, 2013	8.0%
January 1, 2014	7.0%
January 1, 2015	6.0%
January 1, 2016	5.0%
January 1, 2017	4.0%
January 1, 2018	3.0%
January 1, 2019	2.0%
January 1, 2020	1.0%

#### **§ 95355. SF<sub>6</sub> GIS Inventory.**

All GIS owners and particle accelerator operators shall establish and maintain a current and complete inventory of all GIS which includes the following information:

- (a) Equipment location;
- (b) Equipment type;
- (c) Equipment identification number;
- (d) Equipment manufacturer;
- (e) Equipment voltage capacity (in kilovolts);
- (f) Date equipment was manufactured;
- (g) Equipment status (in use, not in use, retired, sold); and
- (h) Equipment SF<sub>6</sub> nameplate capacity (charge in pounds).

#### **§ 95356. Reporting and Recordkeeping.**

- (a) SF<sub>6</sub> Emission Data and Inventory Report
  - (1) All GIS owners and particle accelerator operators shall submit a completed SF<sub>6</sub> emission data report to the Executive Officer no later than June 1 of each calendar year beginning in 2012, for emissions occurring in the previous calendar year.

- (2) SF<sub>6</sub> emission data reports shall include the following information:
- (A) Entity name, physical address, and mailing address;
  - (B) Name and contact information including email address and telephone number of the person submitting the emission data report and the person primarily responsible for preparing and submitting the report;
  - (C) The year for which the report is submitted;
  - (D) The submitting entity's annual SF<sub>6</sub> emissions.
  - (E) The completed GIS inventory of all which includes the following information:
  - (F) A signed and dated statement provided by the GIS owner(s) and particle accelerator operator(s) that the report has been prepared in accordance with this Subarticle, and that the statements and information contained in the emission data report are true, accurate, and complete.

**§ 95357. Document Retention and Record Keeping Requirements.**

- (a) Owners of gas insulated switchgear and operators of particle accelerators shall:
- (1) Establish and maintain procedures for document retention and record keeping.
  - (2) Maintain records, including, but not limited to supporting material invoices, receipts, accounting records, and cylinder inventory spreadsheets.
  - (3) Continuously update and maintain as current all inventory data.
- (b) These records must be retained for five years at the normal place of business of an entity subject to this regulation; and
- (c) Must be provided, within 30 working days, to the Executive Officer upon request.

**§ 95358. Enforcement.**

- (a) *Penalties.* Penalties may be assessed for any violation of this subarticle pursuant to Health and Safety Code section 38580. Each day during any portion of which a violation occurs is a separate offense.
- (b) *Injunctions.* Any violation of this subarticle may be enjoined pursuant to Health and Safety Code section 41513.
- (c) *Revocation.* The Executive Officer may revoke any Exemption issued pursuant to this subarticle for a violation of this subarticle.
- (d) Each day or portion thereof that any report required by this subarticle remains unsubmitted, is submitted late, or contains incomplete or inaccurate information, shall constitute a single, separate violation of this subarticle.